

## 11

## Examples 8-13

Matrix tablets with the following composition per tablet

	Example					
	8	9	10	11	12	13
Morphine sulfate pentahydrate	60 mg	60 mg	60 mg	60 mg	60 mg	60 mg
Hydroxypropylmethylcellulose (Metolose 90 SH 15,000 from Shinetsu), 15,000 mPa · s	60 mg	60 mg	60 mg	60 mg	60 mg	60 mg
Xanthan, NF	10 mg	30 mg				
Carboxymethylcellulose (Tylose C300)			10 mg			
Carboxymethylcellulose (Tylose C600)				10 mg		
Hydroxyethylcellulose (Tylose H300)					10 mg	
Hydroxyethylcellulose (Tylose H4000)						10 mg
Microcrystalline cellulose (Avicel PH 102 from FMC)	123 mg	123 mg	123 mg	123 mg	123 mg	123 mg
Highly disperse silicon dioxide	4 mg	4 mg	4 mg	4 mg	4 mg	4 mg
Magnesium stearate	3 mg	3 mg	3 mg	3 mg	3 mg	3 mg

One of each of these tablets was ground and shaken with 10 ml of water. A viscous, turbid suspension with enclosed air bubbles formed. Once the coarse, solid components of the suspension had settled out, the [gel] was drawn up into a syringe with a 0.9 mm diameter needle. The drawn up gel was injected into water at 37° C. and clearly visible threads, which did not mix with the water, with the diameter of the needle remained discernible. While the threads could be broken up by stirring, they could not be dissolved and the thread fragments remained visible to the naked eye. Were such a gel to be injected into blood vessels, vessel blockages would occur.

## Examples 14-18

Capsules with the following composition of the simple powder mixture per capsule (size 4 capsule)

Example	14	15	16	17	18
Morphine sulfate pentahydrate	20 mg	20 mg	20 mg	20 mg	20 mg
Xanthan, NF	10 mg				
Carboxymethylcellulose (Tylose C300)		10 mg			
Carboxymethylcellulose (Tylose C600)			10 mg		
Hydroxyethylcellulose (Tylose H300)				10 mg	
Hydroxyethylcellulose (Tylose H4000)					10 mg
Microcrystalline cellulose (Avicel PH 102 from FMC)	68 mg	68 mg	68 mg	68 mg	68 mg
Highly disperse silicon dioxide	1 mg	1 mg	1 mg	1 mg	1 mg
Magnesium stearate	1 mg	1 mg	1 mg	1 mg	1 mg

One of each of these tablets was ground and shaken with 10 ml of water. A viscous, turbid suspension with enclosed air bubbles formed. Once the coarse, solid components of the suspension had settled out, the [gel] was drawn up into a syringe with a 0.9 mm diameter needle. The drawn up gel was injected into water at 37° C. and clearly visible threads,

## 12

which did not mix with the water, with the diameter of the needle remained discernible. While the threads could be broken up by stirring, they could not be dissolved and the

thread fragments remained visible to the naked eye. Were such a gel to be injected into blood vessels, vessel blockages would occur.

The invention claimed is:

1. A solid dosage form for oral administration with reduced potential for parenteral abuse, said dosage form comprising:

(a) one or more active ingredients having potential for abuse selected from the group consisting of hydrocodone, morphine, oxycodone, tramadol, tapentadol, and pharmaceutically acceptable salts and solvates thereof; and

(b) one or more viscosity-increasing agents in a quantity such that an aqueous extract of a total content of the dosage form when comminuted and combined with 10 ml of water at 25° C. forms a gel that can be drawn up into and injected back out of a hypodermic needle having a diameter of 0.9 mm, into a further quantity of water, wherein threads of the gel injected from said needle remain visible to the naked eye in said further quantity of water at 37° C.

2. The dosage form according to claim 1, wherein the active ingredient is oxycodone or a salt or solvate thereof.

3. The dosage form according to claim 1, wherein the active ingredient is hydrocodone or a salt or solvate thereof.

4. The dosage form according to claim 1, wherein the active ingredient is morphine or a salt or solvate thereof.

5. The dosage form according to claim 1, wherein the one or more viscosity-increasing agents are selected from the group consisting of microcrystalline cellulose with 11 wt. % carboxymethylcellulose sodium, carboxymethylcellulose sodium, polyacrylic acid, locust bean flour, citrus pectin, waxy maize starch, sodium alginate, guar flour, iota-carrageenan, karaya gum, gellan gum, galactomannan, tara stone flour, propylene glycol alginate, apple pectin, lemon peel pectin, sodium hyaluronate, tragacanth, tara gum, fermented polysaccharide welan gum and xanthan gum.

6. The dosage form according to claim 1, in particulate form.

7. The dosage form according to claim 1, comprising at least one active ingredient in controlled release form.